



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/676,315

10/01/2003

Keiji Hayashi

1324.68392

8188

7590
Patrick G. Burns
Suite 2500
300 South Wacker Drive
Chicago, IL 60606

08/28/2007

EXAMINER

PAYNE, SHARON E

ART UNIT

PAPER NUMBER

2875

MAIL DATE

DELIVERY MODE

08/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,315

Applicant(s)

HAYASHI ET AL.

Examiner

Sharon E. Payne

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 and 55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 9-12, 15-16 and 55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farchmin et al. (U.S. Patent 5,567,042) in view of Takahashi et al. (JP 2000010095 A) and further in view of Japanese Unexamined Utility Model Application No. H05-59402 (hereinafter "Utility Model").

Regarding claim 9, Farchmin et al. discloses a light reflecting reflector (reference number 26), a plurality of cold-cathode tubes (reference numbers 28a-f) disposed inside the reflector (Fig. 4), wherein the reflector has a reflective surface that reflects the light having been emitted by the cold-cathode tubes in the direction nearly perpendicular to the wall of each tube, in the direction in which the light thus reflected does not re-enter the cold-cathode tubes (Fig. 5). Farchmin et al. does not disclose an optical waveguide or a reflector that only reflects light away from the light source.

Takahashi et al. discloses an optical waveguide connected with an open end of the reflector to guide the light emitted by the tubes (reference number 1, Fig. 1, English abstract).

The Utility Model discloses a reflector that has a reflective surface that reflects light only in a direction in which light thus reflected does not re-enter the cold-cathode tubes (Figs. 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light guide of Takahashi et al. in the apparatus of Farchmin to make the light output more uniform. See the English abstract of Takahashi et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of the Utility Model in the apparatus of Farchmin to enhance light output by making more light come out of the reflector. See Figs. 1 and 2 of the Utility Model.

Concerning claim 10, Farchmin et al. discloses the reflective surface (reference number 50) being so disposed that the surface reflects the emitted light at an angle at which the reflected light runs through the space between the cold-cathode tube and the reflector adjacent thereto or between neighboring cold-cathode tubes (Fig. 5).

Regarding claim 11, Farchmin et al. discloses the reflective surface (reference number 50) being so disposed that the surface reflects the light emitted by one cold-cathode tube at an angle at which the reflected light runs through the space between the one cold-cathode tube and the other cold-cathode tube (Fig. 5) and that the surface reflects the light emitted by the other cold-cathode tube at an angle at which the reflected light runs through the space between the one cold-cathode tube and the wall surface of the reflector (Fig. 5, ray 60).

Concerning claim 12, Farchmin et al. discloses the reflective surface being composed of a plurality of curved segments (Figs. 3-5, reference numbers 54a-f).

4. Claim 15 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuki (JP 10-1091079) in view of Levy (U.S. Patent 2,530,204).

Regarding claim 15, Kazuki discloses a housing (Fig. 5), and an optical waveguide (4) guiding the light from the light source and emitting light through a light emitting surface (Fig. 1A). Kazuki does not disclose a cold cathode tube.

Levy discloses a light source (Fig. 2) having a cold-cathode tube (column 11, lines 70-75) with a phosphor (column 3, lines 37-47) dispersed between opposing inner and outer cylindrical diameters that form a wall of the tube (Fig. 2, see reference number 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Levy in the apparatus of Kazuki to provide a lamp assembly with "high efficiency" (column 1, lines 20-25, of Levy).

Concerning claim 55, Kazuki does not disclose the phosphor being dispersed in a cylinder wall of the cold-cathode tube.

Levy discloses the phosphor (column 3, lines 35-47, reference number 3) being dispersed in a cylinder wall of the cold-cathode tube (Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Levy in the apparatus of Kazuki to provide a lamp assembly with "high efficiency" (column 1, lines 20-25, of Levy).

5. Regarding claim 16, Kazuki discloses a light source having a tube (reference number 1), a housing (reference number 2) that houses the tube

Art Unit: 2875

(Figs. 3 and 4) and has a reflector (reference number 2) formed on an inner surface (Fig. 4), and a transparent filler (reference number 3) filled in the housing (Fig. 8B), an optical waveguide (reference number 4) guiding the light from the light source unit and emitting light through a light-emitting surface (Fig. 8B). Kazuki does not disclose a temperature sensor or a heating element.

Suzawa discloses a cold cathode tube (column 2, lines 25-30), temperature sensor for controlling the temperature of the cold-cathode tube (column 2, lines 25-30).

Okahira et al. discloses a heating element (reference number 46a) on the inner surface of the housing (Fig. 1) for heating the cold-cathode tube (reference number 12).

Putting the heating element on the same inner surface of the housing as is formed the reflector is considered to be an obvious variation. Since the heating element is well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to put the heating element on the same surface as the reflector to more efficiently heat the tube, since rearranging parts involves only routine skill in the art. See M.P.E.P. 2144.04.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the temperature sensor of Suzawa in the apparatus of Kazuki stabilize the temperature of the apparatus. See the abstract of Suzawa.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the heating element of Okahira in the apparatus of Kazuki and Suzawa to "improve the lighting of a cold cathode fluorescent lamp at low temperature." See the English abstract of Okahira et al.

Allowable Subject Matter

6. Claims 13 and 14 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to disclose lighting unit with a second optical waveguide disposed in the space between the cold-cathode tube and the reflector and having two ends that both face an end of the first optical waveguide as recited in claim 13.

Response to Arguments

8. Applicant's arguments filed 6/4/07 have been fully considered but they are not persuasive.

Applicant argues that no new grounds of rejection were presented for claim 16. To the contrary, the portion concerning MPEP 2144.04 constituted a new ground of rejection, as it was not in the previous office action. Thus, the action was not defective. Applicant does not refer to any rules from the MPEP which would indicate that the action was defective, and this action is made final.

Regarding claims 9-12, Applicant argues that Farchmin discloses the same reflector configuration as the Utility Model, meaning that the rejection should not have been made because Farchmin does not meet the element of the claim. To the contrary, Applicant later argues that the Utility Model should not be combined with the other two references because it is appropriate for only one lamp, while Farchmin discloses using several lamps. Thus, Applicant has admitted that the apparatus of the Utility Model is not identical to Farchmin, and, thus, the combination should be made. The limitations are taught by the references for the reasons specified in the rejections. The motivations to combine are in the last sentence of the rejections that start with "It would have been obvious . . .". Thus, a combination was made, and the references were not discussed in a vacuum.

Applicant also argues that Farchmin and the Utility Model should not be combined because the Utility Model is only appropriate for one lamp. To the contrary, nothing in the claim requires that only one reflector be used. Matching reflectors with the Utility Models lamp can be used. Nothing in the claim requires a single reflector, the light unit comprises (not consists) of a reflector. Other reflectors may be in the apparatus.

Applicant also argues that the prior art references themselves must disclose the motivation. To the contrary, MPEP 2143.01 also provides for the motivation coming from the "knowledge of persons of ordinary skill in the art" Thus, the examiner does not have to take the motivation from the

references presented in the rejection, the motivation can come from knowledge already available in the art, which does not have to be in the references in question. The motivations presented come from knowledge of a person of ordinary skill in the art and not just from the examiner's opinion. See also *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) (Examiners are supposed to make these determinations.).

Applicant continues on to argue that MPEP 2144.04 does not apply to claim 16, because the alleged rearrangement would have changed the operation of the device. To the contrary, merely putting the light source on another surface does not change the basic operation of the device, and the motivation given is merely a proper motivation for a 35 USC 103 rejection and not an admission of anything. Applicant indicates that the rearrangement of the light source has novel benefits, but he does not argue exactly what those novel benefits are. Furthermore, as discussed above, the motivation does not have to come from the references themselves. See the above arguments regarding MPEP 2143.01 and *KSR*.

The arguments concerning claims 13 and 14 are accepted.

The arguments concerning claim 15 and 55 are rendered moot due to new grounds of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2875

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sep

Sharon Payne
SHARON E. PAYNE
PRIMARY EXAMINER